NON-PUBLIC?: N
ACCESSION #: 90002220074
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Byron, Unit 2 PAGE: 1 OF 3

DOCKET NUMBER: 05000455

TITLE: REACTOR TRIP ON LO STEAMLINE PRESSURE TO ONE CHANNEL SPIKING LOW
DURING A FUNCTIONAL SURVEILLANCE
EVENT DATE: 01/18/90 LER #: 90-001-00 REPORT DATE: 02/09/90

OTHER FACILITIES INVOLVED: None DOCKET NO: 05000

OPERATING MODE: 1 POWER LEVEL: 99

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR SECTION:
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: T. Gierich, Operating Engineer Ext. 2218

TELEPHONE: (815) 234-5441

COMPONENT FAILURE DESCRIPTION:
CAUSE: X SYSTEM: SB COMPONENT: PT MANUFACTURER: I204
REPORTABLE NPRDS: Y

SUPPLEMENTAL REPORT EXPECTED: NO

ABSTRACT:

On January 18, 1990, Unit 2 was operating at 99% power. An Instrument Maintenance Technician was performing a functional surveillance on steam pressure channel 526 when channel 525 spiked low. A reactor trip and safety injection followed.

The most probable cause of the event was the failure of the 525 pressure transmitter. The transmitter was replaced, and the spiking has not recurred. This is the first time the coincidence was satisfied during a pressure transmitter failure and resulted in a reactor trip.

This event is reportable per 10CFR50.73(a)(2)(iv) for any event or condition that resulted in manual or automatic actuation of any

Engineered Safety Feature, including the Reactor Protection System.

END OF ABSTRACT

A. PLANT CONDITIONS PRIOR TO EVENT:

Event Date/Time 1/18/90 / 0042
Unit 2 MODE 1 - Power Operations Rx Power 99% RCS AB!
Temperature/Pressure Normal Operating

B. DESCRIPTION OF EVENT:

At the start of this event, steam pressure channel 526 (corresponding to the 2B steam generator) was in test for calibration under 2BIS 3.2.1-015, Surveillance Functional Test for Loop 526 Steam Generator 2B Pressure Protection Channel III. Limiting Condition for Operation Action Requirements (LCOAR) 2BOS 3.2-1a and 2BOS 3.3.6-1a were in effect. The surveillance placed the channel's protection bistables in the tripped condition. At 0042 on January 18, 1990, steam pressure channel 525 (corresponding to the 2B steam generator) spiked low creating a 2 out of 3 coincidence in 1 out of 4 main steam lines for a low steam line pressure safety injection/reactor trip. Procedure 2BEP-0, Reactor Trip or Safety Injection (SI) was entered. At step 32 in 2BEP 0, the safety injection termination criteria was met and 2BEP ES 1.1, SI Termination procedure was entered. The safety injection was reset at 0050. All safety systems functioned as designed. All operator actions were correct.

This event is reportable under 10CFR50.73 (a)(2)(iv).

C. CAUSE OF EVENT:

The proximate cause of the event was a low spike on a transmitter combined with a coincident channel in test. The root cause of the transmitter spike is indeterminate.

The Instrument Maintenance Technician performing the surveillance on channel 526 was several feet away from the protection cabinet (2PA03J) signing a step in the surveillance package when the trip occurred. The surveillance was essentially complete except for restoring the bistables. The technical's activities did not affect channel 525 spiking.

D. SAFETY ANALYSIS:

There was no effect on the health and safety of the plant or public. The plant responded normally following the trip and all Engineered Safety Feature Systems actuated properly. The steam pressure loops supply logic to the water hammer prevention system and initiate safety injection on low steam pressure and steamline isolation on high negative steam pressure rate. Two of the three loops must respond for any safety actuation to occur.

E. CORRECTIVE ACTIONS:

NWR B73382 was written to investigate the spike on the 525 steam pressure channel (2PT-0525). During troubleshooting, a variety of checks were performed on the equipment associated with this loop. The transmitter input loop power supply, both isolated and non-isolated outputs, power to the transmitter, the signal comparator, and both lead lag amplifiers were checked and found functioning properly. The pressure transmitter was replaced as a conservative measure under this NWR.

NWR B73400 was written to monitor transmitter 2PT-0525. No abnormalities were noted. Based on the lack of further spikes, the transmitter replacement is considered to be adequate corrective action.

F. PREVIOUS OCCURRENCES:

No previous LERs were attributed to pressure transmitter failures. A Nuclear Plant Reliability Data System (NPRDS) Component Failure Analysis Report (CFAR) showed a slightly higher failure rate (failures/component-hour) for Unit 1 (2.38E-05) as compared to the industry (7.24E-06). Unit 2 showed a similar comparison (which excluded Unit 1 failures) of 1.34E-05 failures/component-hour compared to an industry rate of 7.65E-06. The significance criterion for the Unit 1 comparison was 2.642 (which is slightly higher than the 1.645 standard used to indicate higher than industry average) and 0.949 for Unit 2. A review of the NPRDS search did not reveal a common mode failure mechanism. A Total Job Management (TJM) search of the Station's maintenance history identified 35 equipment identification numbers with ITT Barton #763 pressure transmitters. A total of 65 work requests were found. Work request 73382 was the only work request found on 2PT-0525. No common mode failure was identified from the TJM search.

G. COMPONENT FAILURE DATA:

MANUFACTURER NOMENCLATURE MODEL NUMBER

ITT Barton Pressure Transmitter 763

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Commonwealth Edison
Byron Nuclear Station
4450 North German Church Road
Byron, Illinois 61010

January 26, 1990

Ltr: BYRON 90-0108

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Dear Sir:

The enclosed Licensee Event Report from Byron Generating Station is being transmitted to you in accordance with the requirements of 10CFR50.73(a)(2)(iv).

This report is number 90-001; Docket No. 50-455.

Sincerely,

R. Pleniewicz
Station Manager
Byron Nuclear Power Station

RP/bb

Enclosure: Licensee Event Report No. 90-001

cc: A. Bert Davis, NRC Region III Administrator
W. Kropp, NRC Senior Resident Inspector
INPO Record Center
CECo Distribution List

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